

29. LEUCAS R. Brown, Prodr. 504. 1810.

绣球防风属 *xu qiu fang feng shu*

Herbs or subshrubs. Leaves entire or dentate. Verticillasters few to many flowered, widely spaced, uniform or reduced in size at end of branches. Calyx tubular to obconical, rarely dilated, 10-veined, straight or curved, truncate or oblique at throat, projected on posterior side; teeth 8–10, usually equal in size. Corolla usually white, rarely yellow, purple, brownish, or scarlet, 2-lipped, tube included; upper lip straight, galeate, densely villous outside; lower lip longer, 3-lobed, middle lobe largest. Stamens ascending beneath upper lip of corolla, close together in pairs; anther cells 2, ovoid, divaricate, apex confluent, often orange. Style unequally 2-cleft at apex, posterior lobe short or obsolete. Nutlets ovoid, triquetrous, subtruncate at apex.

About 100 species: Africa, Asia, Australia, Pacific Islands, two naturalized in South America; eight species in China.

- 1a. Verticillasters terminal, solitary; bracts lanceolate, overlapping to largely conceal flowers; calyx teeth very short 8. *L. cephalotes*
- 1b. Verticillasters usually more than 1 per stem; bracts not concealing flowers; calyx teeth well developed.
 - 2a. Calyx mouth not oblique.
 - 3a. Calyx densely villous inside throat; teeth spreading in fruit; leaves lanceolate to ovate-lanceolate, 6–9×1–3 cm; plants hirsute, densely covered with golden yellow hairs 3. *L. ciliata*
 - 3b. Calyx appressed silky to puberulent or subglabrous inside throat; teeth straight in fruit; leaves ovate; entire plant densely white tomentose.
 - 4a. Leaves ovate-orbicular, 1–2.5(–3)×0.8–1.5 cm, appressed silky to tomentose 1. *L. chinensis*
 - 4b. Leaves ovate, 2.5–4 cm×1–2.5 cm, villous-tomentose (subglabrous in var. *scaberula*) 2. *L. mollissima*
 - 2b. Calyx mouth oblique, constricted or enlarged, reflexed or erect.
 - 5a. Leaves ovate to ovate-lanceolate, coarsely crenate-serrate; calyx mouth constricted, reflexed in fruit 6. *L. martinicensis*
 - 5b. Leaves linear, oblong, to oblong-lanceolate, entire or sparsely serrate; calyx mouth enlarged, straight.
 - 6a. Plants slightly pubescent; calyx prominently oblique at mouth, teeth irregular or obsolete, apical tooth largest; leaves subtire to remotely undulate-serrate 7. *L. lavandulifolia*
 - 6b. Plants hispid; calyx slightly oblique at mouth, teeth regular, spinescent; leaves remotely serrate.
 - 7a. Verticillasters ca. 1.5 cm in diam., few flowered; calyx tube not conspicuously ribbed adaxially 4. *L. zeylanica*
 - 7b. Verticillasters 2–2.5 cm in diam., many flowered; calyx tube conspicuously ribbed adaxially 5. *L. aspera*

1. *Leucas chinensis* (Retzius) R. Brown, Prodr. 504. 1810.

滨海白绒草 *bin hai bai rong cao*

Phlomis chinensis Retzius, Observ. Bot. 2: 19. 1781.

Shrubs 20–30 cm tall; mostly densely appressed white silky-tomentose. Stems robust, branched at base; branches erect or spreading. Leaves sessile to subsessile; leaf blade ovate-orbicular, 8–13×6–10 mm, base broadly cuneate to subcordate, margin crenate-serrate above base, apex obtuse; lateral veins 2 or 3 pairs, impressed adaxially. Verticillasters axillary, 3–8-flowered, 1–2 cm in diam.; bracts linear, 2–3 mm. Calyx tubular-campanulate, ca. 5 mm, densely appressed silky on upper 1/3 inside, veins conspicuously elevated outside; teeth 10, triangular-subulate, ca. 1 mm. Corolla white, ca. 1.1 cm; tube slender, slightly enlarged at throat, ca. 7 mm, glabrous outside, obliquely villous annulate slightly above middle inside; lower lip spreading, middle lobe largest, reniform. Filaments slightly bearded. Nutlets unknown. Fl. Nov–Dec, fr. Dec.

- Sunny waste areas along seashores. Hainan, Taiwan.

2. *Leucas mollissima* Wallich ex Bentham, Pl. Asiat. Rar. 1: 62. 1830.

白绒草 *bai rong cao*

Herbs erect, 0.5–1.5 m tall. Stems slender, twisted, appressed tomentose-villous, much branched; internodes long. Petiole to 1 cm, densely tomentose; leaf blade ovate, 1.5–4×1–2.3 cm, gradually reduced at apex, densely villous-tomentose, corrugate adaxially, greenish white abaxially, base

broadly cuneate to cordate, margin crenate-serrate, apex acute. Verticillasters axillary, widely spaced, 2–8(–10)-flowered. Calyx tubular, ca. 6 mm, truncate at mouth, densely pubescent outside, posterior part puberulent, anterior glabrous inside; veins conspicuous, villous; teeth 10, triangular-subulate, subequal, ca. 1 mm. Corolla white, yellowish, or reddish, ca. 1.3 cm, tube ca. 7 mm, puberulent near throat outside, obliquely villous-annulate on middle inside; lower lip spreading, ca. 1.5×as long as upper lip; middle lobe largest, obcordate; lateral lobes oblong, pilose at base outside, glabrous inside. Nutlets dark brown, ovoid, triquetrous. Fl. May–Oct, fr. Oct–Nov.

Roadsides, grasslands, streamsides, sunny thickets, evergreen forests; 0–2700 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, Taiwan, Yunnan [India, Indonesia, Japan, Malaysia, Myanmar, Nepal, Sri Lanka, Thailand, Vietnam].

Keng (Fl. Males. 8: 340. 1978) includes this species in *Leucas flaccida* R. Brown.

- 1a. Leaves glabrous; calyx hispid 2c. var. *scaberula*
- 1b. Leaves villous-tomentose; calyx densely villous.
 - 2a. Calyx teeth subequal; leaves abaxially densely villous-tomentose 2a. var. *mollissima*
 - 2b. Calyx teeth alternately long and short; leaves abaxially sparsely villous-tomentose 2b. var. *chinensis*

2a. *Leucas mollissima* var. *mollissima*

白绒草 *bai rong cao*

Leaves densely villous tomentose. Calyx densely villous, teeth subequal.

Roadsides, grasslands, shaded wet sites, streamsides, sunny thickets; 800–2000 m. Guangxi, Guizhou, Yunnan [India, Indonesia, Malaysia, Myanmar, Nepal, Sri Lanka, Thailand, Vietnam].

Used medicinally as a tonic.

2b. *Leucas mollissima* var. *chinensis* Benth. Prodr. 12: 525. 1848.

疏毛变种 shu mao bian zhong

Leaves densely villous tomentose adaxially, sparsely so adaxially. Calyx densely villous, teeth 5 long and 5 short.

Dry, sunny areas; 0–2700 m. Fujian, Guangdong, Guizhou, Hubei, Hunan, Sichuan, Taiwan, Yunnan [Japan].

2c. *Leucas mollissima* var. *scaberula* J. D. Hooker, Fl. Brit. India 4: 682. 1885.

糙叶变种 cao ye bian zhong

Leaves glabrous. Calyx hispid.

Tropical evergreen forests, thickets; 500–800 m. Yunnan [India (Sikkim), Myanmar, Nepal, Thailand].

3. *Leucas ciliata* Benth. Pl. Asiat. Rar. 1: 61. 1830.

绣球防风 xiu qiu fang feng

Herbs 30–80(–100) cm tall, hairs yellowish to golden yellow. Stems slender, usually branched at apex, sometimes branched basally, appressed or retrorse hirsute. Petiole 6–10 mm, densely hirsute; leaf blade lanceolate, 6–9×1–3 cm, adaxially appressed pubescent, abaxially sparsely puberulent, base broadly cuneate to subrounded, margin remotely, shallow serrate, apex acute; lateral veins 3–5 pairs, densely pubescent. Verticillasters axillary, few, widely spaced, many flowered, globose, 1.5–2.5 cm in diam.; bracts linear, at least as long as calyx tube, hirsute adaxially, glabrous abaxially. Calyx tubular, ca. 1 cm, apically enlarged, slightly curved, densely hispid, base sparsely hispid or subglabrous outside, throat densely villous, veins conspicuous, mouth truncate or slightly oblique; teeth spinescent, spreading starlike in fruit, ca. 3 mm, hirsute. Corolla white or purple, ca. 2.8 cm; tube ca. 1 cm, glabrous except for puberulent throat outside, bearded annulate inside; upper lip oblong, densely villous outside, glabrous inside; lower lip ca. 1.5×as long, spreading, middle lobe trapeziform, 2-lobed, lateral lobes ovate. Nutlets brown, ovoid. Fl. Jul–Oct, fr. Oct–Nov.

Roadsides, streamsides, grasslands, thickets; 500–2800 m. Guangxi, Guizhou, Sichuan, Yunnan [Bhutan, India (Sikkim), Laos, Myanmar, Nepal, Vietnam].

Used medicinally.

4. *Leucas zeylanica* (Linnaeus) R. Brown, Prodr. 504. 1810.

缙面草 zhou mian cao

Phlomis zeylanica Linnaeus, Sp. Pl. 2: 586. 1753.

Herbs erect, ca. 40 cm tall. Stems hispid-villous or villous-hirsute. Petiole ca. 5 mm; leaf blade oblong-lanceolate, 3.5–5×0.5–1 cm, sparsely strigose, densely so on veins and densely yellowish glandular abaxially, base cuneate-attenuate, margin remotely crenate-serrate above base, apex acuminate, lateral veins 3 or 4 pairs. Verticillasters ca. 1.5 cm in diam., subequal, few flowered, sparsely hispid; bracts linear, mostly shorter than calyx tube, apex somewhat spinescent. Calyx tubular-campanulate, slightly curved, basally glabrous, slightly corrugate, sparsely hispid at apex

outside, minutely hispid inside, veins inconspicuous, not hispid; mouth oblique, slightly constricted; teeth 8 or 9, spinescent, ca. 1 mm. Corolla white or white with purple spots, ca. 1.2 mm; tube slender, straight, slightly enlarged, densely villous near throat, subglabrous at base outside, villous annulate inside; lower lip ca. 2×as long as upper lip, spreading, lateral lobes ovate; middle lobe largest, elliptic, undulate on margin. Nutlets chestnut brown, ellipsoid, subtriquetrous, shiny. Fl. and fr. year round.

Seashores, fields, roadsides, sunny waste slopes; 0–300 m. Guangdong, Guangxi, Hainan [India, Indonesia, Malaysia, Myanmar, Philippines, Sri Lanka].

Used medicinally for coughs, toothaches, and abdominal pains.

5. *Leucas aspera* (Willdenow) Link, Enum. Hort. Berol. Alt. 2: 113. 1822.

蜂巢草 feng chao cao

Phlomis aspera Willdenow, Enum. Pl. 621. 1809.

Herbs annual, 20–40 cm tall. Stems hispid. Petiole short to obsolete, densely hispid; leaf blade linear or oblong-linear, 2.5–6×0.8–1.5 cm, strigose especially on veins abaxially, base cuneate-decurrent, margin sparsely crenate or sometimes subentire, apex obtuse, lateral veins ca. 3 pairs. Verticillasters globose, 2–2.5(–3) cm in diam., many flowered, densely hispid; bracts linear, as long as calyx, margin hispid ciliate, apex slightly spinescent. Calyx tubular, ca. 1 cm, slightly constricted at apex, slightly hispid or subglabrous at base, otherwise densely hispid outside; mouth oblique, erect; teeth straight, broadly triangular, apex spinescent. Corolla white, slightly longer than calyx tube, ca. 1.2 cm; tube ca. 8 mm; lower lip spreading, middle lobe largest. Nutlets brown, oblong, triquetrous, ca. 2 mm, shiny. Fl. and fr. year round.

Fields, open wet areas, sandy grasslands; 100 m. Guangdong, Guangxi, Hainan [India (Sikkim), Indonesia, Malaysia, Philippines, Thailand].

6. *Leucas martinicensis* (Jacquin) R. Brown, Prodr. 504. 1810.

卵叶白绒草 luan ye bai rong cao

Clinopodium martinicense Jacquin, Enum. Syst. Pl. 25. 1760.

Herbs annual, erect, to 60 cm tall. Stems retrorse pubescent. Petiole 0.7–1.5 cm; leaf blade ovate to lanceolate, 4–6×1.5–3 cm, reduced upward, densely pubescent, base rounded to cuneate, margin coarsely crenate-serrate, apex acuminate, lateral veins 5 pairs. Verticillasters 1.5–2 cm in diam. in flower, ca. 3 cm in diam. in fruit, many flowered; bracts subulate, ciliate, spinescent. Calyx membranous in fruit, ca. 1 cm, densely villous outside, glabrous inside, veins conspicuous, distinctly net veined; throat enlarged, mouth constricted, oblique; teeth unequal, spinescent, upper teeth longest. Corolla white tinged red, slightly exerted, slender, ca. 8 mm; tube ca. 7 mm, slightly dilated in throat, not villous annulate inside; lower lip subpatent, lobes oblong. Nutlets dark brown, oblong-ovoid, ca. 1.5 mm, shiny. Fl. Sep–Oct, fr. Nov.

Grassy areas, waste land near habitations; 1100–1500 m. Yunnan [India, Myanmar; Africa, North America, South America].

The plants have a strong minty odor and are burned to repel mosquitos. An infusion of leaves is used for gastrointestinal troubles.

7. **Leucas lavandulifolia** Smith, Cycl. 20, sect. 2, pt. 40. 1812.

线叶白绒草 xian ye bai rong cao

Leonurus indicus N. Burman; *Leucas linifolia* (Roth) Sprengel; *Phlomis linifolia* Roth.

Herbs erect, 0.2–1 m tall, much branched from base, mostly gray pubescent. Stems slender. Petiole short to almost absent; leaf blade oblong-linear, linear-lanceolate, or linear, 2.5–7×1.5–1.2 cm, pubescent, base cuneate-attenuate, margin entire or sparsely undulate-serrate, apex obtuse, lateral veins 2 or 3 pairs. Verticillasters many flowered, 1.5–2.5 cm in diam.; bracts linear, shorter than calyx tube, apex spinescent. Calyx obovoid, ca. 0.5 mm, densely pubescent outside, glabrous except for apex inside, veins inconspicuous, mouth oblique; teeth irregular, upper tooth largest. Corolla white, ca. 1.5 cm; tube ca. 9 mm, villous near enlarged throat outside, slightly villous annulate inside; lower lip horizontal, ca. 2× as long as adaxial, slightly villous at base outside, glabrous inside, lateral lobes small. Nutlets brown, ovoid. Fl. Oct-Dec, fr. Dec-Jan.

Dry sunny areas, roadsides, riverbanks, thickets at forest margins; 0–1000(–1400) m. Guangdong, Yunnan [India, Indonesia, Malaysia, Philippines, Thailand; Africa].

8. **Leucas cephalotes** (Roth) Sprengel, Syst. Veg. 2: 743. 1825.

头序白绒草 tou xu bai rong cao

Phlomis cephalotes Roth, Nov. Pl. Sp. 262. 1821; *Leucas capitata* Desfontaines.

Herbs annual, to 90 cm tall. Stems hispid. Leaf blade ovate to lanceolate, 5–10 cm, membranous, pubescent, base cuneate, margin crenate-serrate, apex acute. Verticillasters terminal, globose, many flowered, to 5 cm in diam.; bracts narrow lanceolate, overlapping, concealing calyces. Calyx tubular, ca. 2 cm, slightly curved, softly pubescent; teeth very short, subulate.

Open areas; 1700 m. Xizang [Afghanistan, Bhutan, India, Nepal].

